

CURRICULUM VITAE

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1. ACADEMIC DEGREES

- Degree In Chemistry (BSC). Autónoma University of Madrid (Spain). 1982.
- Ph. D. In Chemistry. Autónoma University of Madrid. 1987. *Cum Laude*

2. PROFESSIONAL EMPLOYMENTS AND RESEARCH EXPERIENCE

- 1985-1987. Graduent Student. Fellow of the MEC. Organic Chemistry Institute. CSIC. Supervisor: Dr. Manuel Martín-Lomas.
- 1988. Postdoctoral Fellow, École Normale Supérieure, Paris. Supervisor: Dr. Pierre Sinaÿ
- 1989. Posdoctoral Fellow. Massachusetts Institute of Technology. Supervisor: Dr. A.M. Klibanov
- 1990-2002. Tenure Scientist at the Department of Biological Chemistry, Institute of Organic Chemistry, C.S.I.C. Madrid (Spain).
- 1991 (4 months). Visiting Scientist at the Chemical Center, Lund (Sweden). Supervisor: Dr. K. G. I. Nilsson.
- 2002-. Scientific Researcher at the Department of Biological Chemistry, Institute of Organic Chemistry, C.S.I.C. Madrid (Spain).

3. MAIN RESEARCH INTEREST

Carbohydrate chemistry. Synthesis of glycoconjugates with biological significance. Use of enzymes in organic synthesis.

4. PUBLICATIONS

- A. Fernández-Mayoralas y M. Martín-Loma. Synthesis of 3-O-methyl and 4-O-methyltetra-O-acetyl- α -D-galactopyranose. *Anal. Quim.*, 80C (1984) 184-185.
- A. Fernández-Mayoralas, M. Martín-Lomas y D. Villanueva. 4-O- β -D-Galactopyranosyl-3-O-methyl-D-glucose: a new synthesis and application to the evaluation of intestinal lactase. *Carbohydr. Res.*, 140 (1985) 81-91.
- M. Alonso-López, M. Bernabé, A. Fernández-Mayoralas, J. Jiménez-Barbero, M. Martín-Lomas y S. Penadés. Chiral macrocyclic compounds from lactose derivatives. *Carbohydr. Res.*, 150 (1986) 103-109.
- A. Fernández-Mayoralas y M. Martín-Lomas. Synthesis of 3 and 2'-fucosyllactose and 3,2'-difucosyllactose from partially benzylated lactose derivatives. *Carbohydr. Res.*, 154 (1986) 93-101.
- M. L. Jimeno, A. Fernández-Mayoralas, M. Martín-Lomas y A. Alemany. ^{13}C -NMR studies of peracetylated derivatives of O- α and O- β -D-galactopyranosyl-(1 \rightarrow 3) and (1 \rightarrow 4)- α -galactopyranose. *Carbohydr. Res.*, 161 (1987) 144-149.
- M. Alonso-López, J. Barbat, E. Fanton, A. Fernández-Mayoralas, J. Gelas, D. Horton, M. Martín-Lomas, S. Penadés. The acetonation of lactose and benzyl β -lactoside with 2-methoxypropene. *Tetrahedron*, 43 (1987) 1169-1176.

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C. Jaramillo, A. Fernández-Mayoralas y M. Martín-Lomas. The acetonation of methyl β -maltoside with 2-methoxypropene. *Carbohydr. Res.*, 182 (1988) 153-158.

A. Fernández-Mayoralas, M. Bernabé, M. Martín-Lomas. The regioselectivity of dibutylstannylene mediated oxidation of methyl 3',4'-O-isopropylidene- β and α -lactoside. A new synthesis of N-acetylactosamine. *Tetrahedron*, 44 (1988) 4877-4882.

A. Fernández-Mayoralas, A. Marra, M. Trumtel, A. Veyrieres y P. Sinay. Convenient synthesis of substituted pyranoid glycals from thiophenyl glucosides and glycosyl phenylsulfones. *Tetrahedr. Lett.*, 30 (1989) 2537-2540.

A. Fernández-Mayoralas, A. Marra, M. Trumtel, A. Veyrieres y P. Sinay. Preparation of pyranoid glycal derivatives from phenyl thioglycosides and glycosyl phenylsulfones. *Carbohydr. Res.*, 188 (1989) 81-95.

M. Bernabé, A. Fernández-Mayoralas, J. Jiménez-Barbero, M. Martín-Lomas y A. Rivera. The conformation of eight-membered 3,2'-O-isopropylidene acetals of some common disaccharides. *J. Chem. Soc., Perkin Trans. II*, (1989) 1867-1873.

T. Desai, A. Fernández-Mayoralas, J. Gigg, R. Gigg y S. Payne. The synthesis and resolution of 1,5,6-tri-O-benzyl-myo-inositol. *Carbohydr. Res.*, 205 (1990) 105-123.

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A. Rivera-Sagredo, A. Fernández-Mayoralas, J. Jiménez-Barbero, M. Martín-Lomas, D. Villanueva y J. J. Aragón. 4-O- β -D-Galactopyranosyl-D-xylose: A new synthesis and application to the evaluation of intestinal lactase. *Carbohydr. Res.*, 228 (1992) 129-135.

F. F. Santos-Benito, M. Nieto-Sampedro, A. Fernández-Mayoralas y M. Martín-Lomas. Synthesis of oligosaccharide inhibitors of neural cell division. *Carbohydr. Res.*, 230 (1992) 185-190.

R. López y A. Fernández-Mayoralas. Controlling yield and regioselectivity in the enzymatic synthesis of β -D-galactopyranosyl- β -D-xylopyranosides. *Tetrahedr. Lett.*, 33 (1992) 5449-5452.

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J. J. Aragón, A. Fernández-Mayoralas, J. Jiménez-Barbero, M. Martín-Lomas, A. Rivera-Sagredo y D. Villanueva. Evaluation of rat intestinal lactase in vivo with 4-galactosylxylose. *Clin. Chim. Acta*, 210 (1992) 221-226.

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J. M. Guisán, V. Rodríguez, G. Soler, C. Santana, R. Fernández-Lafuente, A. Batisda, C. M. Rosell, R. López, A. Fernández-Mayoralas y M. Martín-Lomas. Synthesis of pharmaceutical oligosaccharides

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E. Montero, J. Alonso, F. J. Cañada, A. Fernández-Mayoralas, M. Martín-Lomas. Regioselectivity of the enzymatic transgalactosidation of D- and L-xylose catalysed by β -galactosidase. *Carbohydr. Res.*, 305 (1998) 383-391.

B. Aguilera, A. Fernández-Mayoralas. Synthesis of a thio-analogue of Lewis X by regioselective opening of cyclic sulfamidates. *J. Org. Chem.*, 63 (1998) 2719-2723.

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C. Jaramillo, G. Corrales, A. Fernández-Mayoralas. Glycosyl phenyl sulfoxides as a source of glycosyl carbanions: Stereoselective synthesis of C-fucosides. *Tetrahedron Lett.*, 39 (1998) 7783-7786.

B. Aguilera, L. Romero-Ramírez, J. Abad-Rodríguez, G. Corrales, M. Nieto-Sampedro, A. Fernández-Mayoralas. Novel disaccharide inhibitors of human glioma cell division. *J. Med. Chem.*, 41 (1998), 4599-4606.

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M. Carpintero, A. Fernández-Mayoralas, J. Jiménez-Barbero. The conformational behaviour of fucosyl and carba-fucosyl mimetics in the free and in the protein bound state. *Eur. J. Org. Chem.*, (2001), 681-689.

M. Carpintero, I. Nieto, A. Fernández-Mayoralas. Stereoselective synthesis of α - and β -C-glycosides from glycosyl sulfoxides: Scope and limitations. *J. Org. Chem.*, 66 (2001) 1768-1774.

A. Bastida, A. Fernández-Mayoralas, R. Gómez, F. Iradier, J. C. Carretero, E. García-Junceda. Heterologous over-expression of α -1,6-fucosyltransferase from *Rhizobium* sp. Application to the synthesis of the trisaccharide β -D-GlcNAc(1-4)-(α -L-fuc-(1-6))-D-GlcNAc, study of the acceptor specificity, and evaluation of polyhydroxylated indolizidenes as inhibitors. *Chem. Eur. J.*, 7 (2001) 2390-2397.

C. Alhambra, J. Castro, J. L. Chiara, E. Fernández, A. Fernández-Mayoralas, J. M. Fiandor, S. García-Ochoa, M. D. Martín-Ortega. An improved two-resin method for the cleavage of tertiary amines from REM resins. *Tetrahedron Lett.*, 42 (2001) 6675-6678.

M. Carpintero, A. Bastida, E. García-Junceda, J. Jiménez-Barbero, A. Fernández-Mayoralas. Synthesis of carba- and C-fucopyranosides and their evaluation as α -fucosidase inhibitors. Analysis of unusual conformation adopted by an amino-C-fucopyranoside. *Eur. J. Org. Chem.*, (2001) 4127-4135.

A. Bastida, A. Fernández-Mayoralas, E. García-Junceda. C-Terminal truncation of α -1,6-fucosyltransferase from *Rhizobium* sp. does not annul the transferase activity of the enzyme. *Bioorg. Med. Chem.*, 10 (2002) 737-742.

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- F. Calderón, M. Carpintero, E. García-Junceda, A. Fernández-Mayoralas, A. Bastida. Structure/activity relationship of carba and C-fucopyranosides as inhibitors of α -1,6-fucosyltransferases by molecular modelling and kinetic studies. *Lett. Org. Chem.*, 2 (2005) 247-254.
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4. PATENTS

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procedimiento de obtención. Nº: 9902827. Year: 1999. Assignee: CSIC-Univ. Santiago de Compostela. Countries: Spain.

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